

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL R. RENEAU

Appeal No. 1998-3081
Application No. 08/587,292

ON BRIEF

Before FLEMING, DIXON, and GROSS, **Administrative Patent Judges**.
DIXON, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-5, 7-9 and 22. Claims 6 and 10-18 have been indicated as allowable by the examiner, and claims 19-21 have been canceled.

We AFFIRM.

BACKGROUND

The appellant's invention relates to a mechanical shock sensor using twisted contacts to reduce bounce. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. A shock sensor comprising:
 - a) a housing;
 - b) a first conductive lead extending into the housing
 - c) a second conductive lead extending into the housing
 - d) a spring defining a plane, wherein the spring has a fixed end mounted to the first lead, and a movable end, the movable end having portions defining a moveable contact for completing an electrical circuit, the moveable contact defining a moveable contact plane;
 - e) a fixed contact electrically connected to the second lead, wherein the fixed contact has portions defining a fixed contact plane, and wherein the moveable and fixed contact planes are in spaced parallel relation so that movement of the moveable contact normal to the plane defined by the spring brings the moveable and fixed contacts into electrical engagement, and wherein the moveable and fixed contact planes are inclined with respect to the plane defined by the spring; and
 - f) an acceleration sensing mass mounted to the spring, wherein acceleration of the housing by a shock inducing event in a direction normal to the plane defined by the spring causes the spring to bend in a direction aligned with the accelerative force, to cause the moveable contact to engage the fixed contact and thereby make electrical connection, wherein the inclination of the moveable and fixed contact planes from the plane defined by the spring results in a frictional engagement therebetween and serves to reduce closure bounce and increase the duration of the electrical connection.

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The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Andres et al. (Andres) DE 35 09 054 Apr. 24, 1986

Jenkins, R.O., "Contact bounce in dry reed relays," **PROC. IEE**, Vol. 114, No. 11, pp. 1617-1622, Nov. 1967.

Claims 1-5, 7-9 and 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Andres in view of Jenkins.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejection, we make reference to the final rejection (Paper No. 14, mailed Dec. 5, 1997) and the examiner's answer (Paper No. 18, mailed Apr. 3, 1998) for the examiner's reasoning in support of the rejection, and to the appellant's brief (Paper No. 17, filed Mar. 23, 1998) and reply brief (Paper No. 19, filed Apr. 16, 1998) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

The examiner has, in our view, set forth a **prima facie** case of obviousness, in the final rejection at pages 2-3, as incorporated into the answer, with respect to the invention as recited in claim 1. Appellant groups the claims as a single group and does not separately argue the patentability of individual claims. (See brief at page 3.) Therefore, we limit our review to independent claim 1. The examiner maintains that Andres teaches the shock sensor as recited, but does not disclose the twisted contact. (See final rejection at page 2.) We agree with the examiner. The examiner maintains that “[a]lthough Andres and/or Jenkins may not explicitly suggest the combination of their teachings, Jenkins nevertheless teaches a known solution, twisting the contacts, to a known problem, contact bounce, in general in switches of all kinds and types that the skilled artisan would have readily recognized as beneficial to a shock sensor or acceleration switch as taught by Andres.” (See answer at page 3.) We agree with the examiner.

Appellant argues that the examiner agreed during the telephonic interview on March 4, 1998 that the references themselves do not expressly or impliedly suggest the combination. (See brief at page 4.) First, this statement is not in the administrative record beyond the above statement by the examiner. Therefore, we cannot comment on any oral statements by the examiner. We agree with the examiner’s statement that the references do not expressly state that these two references should be combined, but the teachings of Andres clearly recognize the problem of bounce in the shock switches. Therefore, it would

have been obvious to one of ordinary skill in the art at the time of the invention to seek a solution to or reduction in switch contact bounce. The skilled artisan would have found the teachings of Jenkins relative to various methodologies to reduce bounce in reed switches and would have been motivated to combine the teachings of Jenkins into the sensor of Andres. (See answer at pages 3-4.) We agree with the examiner.

Appellant argues the differences between the reed switches of Jenkins alone and the invention as recited in claim 1. (See brief at page 4.) This argument is not persuasive. Appellant argues that Jenkins must be read for its entire disclosure. We agree with appellant. Appellant further argues that Jenkins does not lead to an expectation that twisted contacts will function adequately in a reed switch. While we agree with appellant, we note that Jenkins discloses that the limitation with twisted contacts in a reed switch is that the minimum closing current must be increased. With the teaching that twisted contacts “can be very effective in reducing bounce” (see Jenkins at page 1621; section 4.4.4) and no requirement for any closing current in a shock sensor, skilled artisans would have been motivated to form the contacts of Andres with a twist to reduce bounce. Appellant argues that Jenkins discloses that twisting contacts is of limited effectiveness in a reed switch. (See brief at page 5.) While we agree with respect to the current requirements, Jenkins is clear that the orientation is effective in reducing bounce, as discussed above.

Appellant argues that the examiner used impermissible hindsight. (See brief at page 5.) We disagree with appellant. Appellant argues that the examiner has not set forth a **prima facie** case of obviousness nor a convincing line of reasoning for the combination of the teachings of Andres and Jenkins. (See brief at page 5.) We disagree with appellant, as discussed above. Appellant argues that Jenkins does not provide a reasonable expectation that twisted contacts would be successful in overcoming contact bounce. (See brief at page 6.) We disagree with appellant. As discussed above, Jenkins clearly discloses and suggests the use of twisted contacts to reduce contact bounce. Therefore, these arguments are not persuasive.

Appellant argues in the reply brief that the use of twisted contacts is not a known solution to bounce in all switches. (See reply brief at pages 1-2.) While we agree with this statement in view of the disclosure in Jenkins, it is clear that Jenkins does suggest that twisted contacts is a very effective solution to contact bounce. Appellant has provided no evidence to the contrary. Therefore, we accept the teaching and suggestion of Jenkins. Therefore, this argument is not persuasive. Appellant argues that the examiner merely sets forth legal tests and truisms without application thereof in the answer. (See reply brief at page 3.) This argument is not persuasive. Since appellant has not rebutted the **prima facie** case of obviousness, we will sustain the rejection of claims 1-5, 7-9 and 22.

CONCLUSION

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To summarize, the decision of the examiner to reject claims 1-5, 7-9 and 22 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

MICHAEL R. FLEMING
Administrative Patent Judge

JOSEPH L. DIXON
Administrative Patent Judge

ANITA PELLMAN GROSS
Administrative Patent Judge

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